

REMARKS

Claims 1-8 are all the claims pending in the application.

Claims 1-8 have been rejected under 35 U.S.C. § 102(b) as allegedly being anticipated by U.S. Patent No. 6,429,103 to Johnson *et al.* ("Johnson '103").

Applicants respectfully traverse this rejection.

Claim 1 recites an InGaP layer containing n-type impurities as a front side electron supplying layer.

In contrast, Johnson '103 discloses an Emode HIGFET semiconductor device including a stack 10 of compound semiconductor layers formed on AlGaAs layer 15 of buffer 11. *See*, Fig. 3; col. 2, line 66 to col. 3, line 1. Figures 1 and 3 of Johnson '103 show that the buffer 11 includes AlGaAs, GaAs, and a substrate. At page 2 of the Office Action, the Examiner asserts that the buffer 11 disclosed in Johnson '103 is identical to the InGaP layer recited in Claim 1.

Applicants respectfully submit that the InGaP layer fails to read on the buffer 11 disclosed in Johnson '103. Each of GaAs, AlGaAs, and the substrate found in buffer 11 are different from InGaP.

Moreover, buffer 11 in Johnson '103 does not even correspond to the electron supplying layer of the present invention. Rather, although the electron supplying layer according to the present invention is not explicitly mentioned in Johnson '103, it corresponds to thin layer 17 in Fig. 3 of the reference. However, Johnson '103 neither teaches nor suggests that thin layer 17 is an InGaP layer containing n-type impurities.

RESPONSE UNDER 37 C.F.R. § 1.111
U.S. Application No. 10/540,515
Attorney Docket No. Q88663

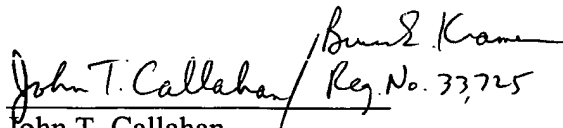
Further, Figure 2 of Johnson '103 does not disclose an electron mobility at room temperature (300 K) of $8000 \text{ cm}^2/\text{Vs}$ or more. Claim 1 recites that the InGaAs layer has an electron mobility at room temperature (300 K) of $8000 \text{ cm}^2/\text{V}\cdot\text{s}$ or more. In contrast, Figure 2 of Johnson '103 provides a graph showing the relationship between GaAs growth rate and the temperature. However, this is not relevant to the electron mobility of the InGaAs layer recited in claim 1.

Additionally, Claims 2-5 depend from Claim 1. Also, Claims 6-8 are directed to a method for manufacturing the compound semiconductor epitaxial substrate according to Claim 1, 4, or 5. Therefore, Claims 2-8 are patentable for at least the same reasons as Claim 1.

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

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Date: April 24, 2006